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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

RESAN, STEVAN A

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 04/09/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-6

Office Action Summary

Application No.

09/943,787

Applicant(s)

ITAI ET AL.

Examiner

Stevan A. Resan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 3,4 and 7-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

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1. Applicant's election with traverse of claims 1,2,5, and 6 in Paper No. 5 is acknowledged. The traversal is on the ground(s) that both groups would not place an undue burden on the examiner as the claims in the two groups contain many common features. This is not found persuasive since a burden has been shown since it was shown that the groups of claims have a separate status in the art as shown by their different classification.

The requirement is still deemed proper and is therefore made FINAL.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1,2,5,6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 5 are deemed indefinite since there is no antecedent basis for "said lubricant which is not connected to said protection layer". The examiner suggests amending to insert antecedent basis and to clarify the language as follows:

Replace (b) with

(b) repeating a process to said protection layer of amorphous carbon plural times said process comprising an application process of applying a lubricant to said protection layer, a subsequent ultraviolet rays treatment process which connects a portion of said lubricant to said protection layer while leaving a portion which is not connected to said protection layer, and a subsequent washing process which removes said lubricant which is not connected to said protection layer.

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The examiner also suggests "solvent" be added before "washing process.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1,2,5,6 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 04-319526 Lin et al or JP 09-052707 Ishikawa et al in view of either JP 01-296429 Kazufumi et al or JP 04 214221 Ueda et al.

Both Lin et al and Ishikawa et al disclose a method of laminating which includes applying a lubricant onto a carbon layer and treating it with ultraviolet rays to connect the lubricant to the protective layer. These references do not disclose that the process may be repeated plural times. However both Kazufumi et al and Ueda et al. teach a process which forms multiple lubrication layers. Therefore it would have been obvious to one of ordinary skill in the art to repeat the process of Lin et al or Ishikawa et al plural times to form multiple layers motivated by the desire to increase abrasion resistance and durability and decrease shear stress.

The examiner points out that the formation of a smooth uniform coated film as is presently disclosed is limited by the solution viscosity and solvent evaporation rate. In order to coat thicker films one of ordinary skill in the coating art would apply the film in multiple layers. With respect to a washing step to remove unbonded lubricant, it would have been obvious to one of ordinary skill in the art to remove unbonded lubricant

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before the bonding process was repeated in order to provide a monolithic substrate to which to bond the next layer, i.e. one of ordinary skill would not bond to a layer or residue which would be prone to delamination.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Keem et al is cited for teaching multiple layers which may include carbon for protection and fluorocarbon polymers for lubrication.


Schmidt is cited for teaching a multiple layer protective film irradiated with UV.

Ohnuki et al is cited for teaching the benefits of the elimination of low molecular weight perfluoropolyether lubricant fractions.

Kasamatsu et al is cited for teaching coating a perfluoropolyether lubricant onto a carbon protective layer, irradiating with UV and solvent rinsing.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stevan A. Resan whose telephone number is (703) 308-4287. The examiner can normally be reached on Tues-Fri from 7:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau, can be reached on (703) *308-2367. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-7718


STEVAN A. RESAN
PRIMARY EXAMINER